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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/728,192	12/01/2000	Richard G. Ogier	SRI-009C	4499

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EXAMINER

TON, ANTHONY T

ART UNIT PAPER NUMBER

2661

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13

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/728,192

Applicant(s)

OGIER, RICHARD G.

Examiner

Anthony T Ton

Art Unit

2661

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 December 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 April 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4, 9, 10, 12
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Objections

1. Claims 1, 7-10 are objected to because of the following informalities:
 - a) Claim 1: Term "each include" in line 5 of the claim is a typo. It is suggested to change said term to "each includes".
 - b) Claim 7: Term "can identity" in line 3 of the claim is a typo. It is suggested to change said term to "can identify".
 - c) Claims 8 and 9: Term "neighboring nodes" in line 2 of the claims is not consistent with term "neighbor nodes" in line 2 of Claim 8. It is suggested to change "neighboring nodes" to "neighbor nodes".
 - d) Claim 10: Terms "each include" in line 4 of the claim is a typo. It is suggested to change said term to "each includes".

Appropriate correction is required.

Specification Objections

2. The disclosure is objected to because of the following informalities:
 - a) Page 3 lines 8 and 9: It is suggested to change "neighboring nodes" to "neighbor nodes".
 - b) Page 3 line 13: It is suggested to change "each include" to "each includes".
 - c) Page 9 lines 2 and 3: Two different parts with the same number: "bi-directional link 18, and node 18". It is suggested to change "bi-directional link 18" to

"bi-directional link" for distinguishing between the node 18 and the link connected to this node.

d) Page 13 line 20: "the TBRPF protocol **58**" cannot be found in Fig. 2 of the applicant's drawings. It should be specified.

c) Page 64 lines 7 and 12: Two different subtitles for two different paragraphs with the same name: "Globally Unique IPv4 Address without Privacy Concerns". It should be specified.

Appropriate correction is required.

Drawing Objections

3. The drawings are objected to because of the following minor informalities:

a) Figure 10A: An exemplary format "**198**" specified in page 44 line 20 of the application specification cannot be found in **Fig. 10A**; it is suggested that add label "**198**" to the top right corner of the Fig. 10A to specify this figure.

b) Figure 14: The rectangular box that contains term "IS HELLO MSG COMPLETE?". By conventional drawing, the shape of this box should be changed to a shape of a diamond to accommodate conditions for "YES" and "NO" of the term.

b) Figure 16: The diamond box that contains term "SPECIAL OUI FOUND?". If the special OUI is not found, what is a next step for the process 330? An arrowed line pointed to an appropriate box for "**NO**" condition should be added to the figure.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

5. Claim 3 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "approximately equals" in claim 3 line 2 is a relative term, which renders the claim indefinite. The term "approximately equals" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is suggested to change "approximately equals" to "equals".

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1, 2, 4-7, and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Vu (US 5,056,085).

a) Claim 1: Vu disclosed a communication network having a plurality of communication nodes at least one source node and a plurality of receiving nodes, the source node transmitting data packets to all the receiving nodes in a broadcast transmission mode, a method comprising (see abstract and Fig.18):

receiving from a neighbor node a neighbor discovery message (see steps 1-3 in Fig.18; col.5 lines 4-8);

periodically transmitting a predetermined number of neighbor discovery messages that each includes an identity of the neighbor node in response to the received neighbor discovery message (see col. 8 lines 10-29 and lines 35-39); and

after transmitting the predetermined number of neighbor discovery messages, transmitting neighbor discovery messages that omit the identity of the neighbor node until another neighbor discovery message is received from the neighbor node that indicates a change in a communications state associated with the neighbor node (see abstract, col. 5 lines 17-47; and col. 8 line 10 – col.10 line 4)

b) Claim 2: The method of claim 1 further comprising determining that the neighbor node is in a lost state if a message used for neighbor node discovery is not received from the neighbor node within a predetermined time period (see last paragraph of the abstract; col. 5 lines 29-34 and lines 58-66; col.8 lines 52-56).

c) Claim 4: The method of claim 1 wherein each periodically transmitted neighbor discovery message includes a list of neighbor nodes that are identified as

being in a heard state within a predetermined time period (see abstract; col.2 lines 21-34; col.5 lines 48-52; col. 6 lines 19-27)

d) Claim 5: The method of claim 1 further comprising identifying the neighbor node as being a symmetric state if a neighbor discovery message received by a particular node includes an identity of the particular node in a list of neighbor nodes identified by the neighbor node as being in a heard state (see col. 5 lines 17-24).

e) Claim 6: The method of claim 5 further comprising subsequently transmitting by the particular node a neighbor discovery message that omits the identity of the neighbor node from that neighbor discovery message in response to identifying the neighbor node as being the symmetric state (see abstract for non-scout data packets (col. 8 line 52 – col. 10 line 4).

f) Claim 7: The method of claim 5 further comprising subsequently transmitting by a particular node a neighbor discovery message that includes the identity of the neighbor node so that other nodes in the network can identify the neighbor node as having established a symmetric link with the particular node (see abstract; col. 2 lines 21-34; col.5 lines 48-57).

g) Claim 10: Vu would apply the rejections on the claim 1 to the claim 10 in a network as taught.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Vu (US 5,056,085)

In Claim 3, Vu did not explicitly disclose a method wherein a predetermined time period has a duration that equals the duration of a time interval between subsequent transmissions of neighbor discovery messages multiplied by the predetermined number. However, Vu did disclose an Ack Scout Timer for a receipt of acknowledgements of a scout packet. The timer is set roughly to the longest transmission time between a particular node and its neighbor nodes (see col. 5 lines 29-34). Therefore, it would have been obvious to one of ordinary skill in the art to modify such a transmission time of Vu, as taught by the applicant in order to specify for a predetermined time period that can apply for neighbor discovery messages transmitted from one node to other nodes in a communication network for discovering new nodes and detecting the loss a neighbor node as well.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which

said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vu (US 5,056,085) in view of Flanagan (US 5,506,838).

In Claim 8: Vu failed to teach each transmitted neighbor discovery message includes a list of neighbor nodes that are identified as being a heard state and a list of neighbor nodes that are identified as being in a lost state. Flanagan teaches such two lists (see col.2 lines 31-35, lines 58-61; col.3 lines 8-10, lines 21-25; and col.11 line 44 – col.12 line 34). Therefore, it would have been obvious to one of ordinary skill in the art to employ such two lists of Vu, as taught by Flanagan so that every node in a communication network can identify the status of other nodes for communicating efficiently.

In Claim 9: The method of claim 8 wherein each transmitted neighbor discovery message includes a list of neighbor nodes that are identified as being in a symmetric state. Flanagan teaches such a list (see col.2 lines 43-46; and col.2 line 65 – col.3 line 16; and col.11 lines 7-44). It would have been obvious to one of ordinary skill in the art to employ such a list of Vu, as taught by Flanagan in order that nodes in a communication network can identify which nodes have established a symmetric link for routing packets efficiently.

Citation of Relevant Prior Art

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The Patent number of the prior art listed below is considered

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as citation of relevant prior art in the field of the invention relating to a reduced-overhead protocol for discovering new neighbor nodes and detecting the loss of existing neighbor nodes in a mobile ad-hoc network: Haas (US 6,304,556); Kondylis et al. (US 6,621,805); Shuen (US 5,572,528); Hong et al. (US 5,844,900); and Pearce et al. (6,556,574).


Examiner Information

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anthony T. Ton whose telephone number is 703-305-8956. The examiner can normally be reached on Monday-Friday from 8:00 to 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Douglas W Olms, can be reached on (703) 305-4703. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

ATT


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